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BIENNIAL REPORT
OF THE
Inspector of Coal Mines
OF THE
STATE OF MONTANA
FOR THE YEARS 1907-8

Joseph B. McDermott, Inspector

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JANUARY 1, 1909



COMPLIMENTS OF
JOSEPH B. MCDERMOTT,
State Coal Mine Inspector,
Helena, Montana.

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LETTER OF TRANSMITTAL.

HON. EDWIN L. NORRIS,
Governor of Montana,
Helena, Montana.

Sir: In accordance with the provisions of Section 5, of House Bill 250, Session Laws of 1907, I have endeavored to comply with and herewith submit my report for the period from October 31, 1906, to November 1, 1908.

Respectfully submitted,

JOSEPH B. McDERMOTT,
State Coal Mine Inspector.

INTRODUCTORY.

In submitting report covering 1905 year, also 10 months' production of 1906, the department reported the production for the year 1905 at 1,743,771 tons, and for the 10 months of 1906 at 1,502,200 short tons.

From October 31, 1906, to November 1, 1907, there was an increase of about 13% over a corresponding period of the year previous.

From October 31, 1907, to November 1, 1908, there was a slight decrease, about 2½% in production, due to various causes; Financial panic, shutting down of mines and smelters, incident to decreased price of copper, and stagnation of business generally during the unprecedented floods that prevailed in Montana during the latter part of May and the fore part of June, which floods caused a total cessation of traffic on the Montana Central R. R. for 26 days. This railroad and the B. A. & P. R. R. being the means of transportation between Anaconda, Butte and the A. C. M. Co.'s coal mine at Belt.

Some damage, caused by the floods, laid off the smelter at Great Falls for nearly three months, this smelter with one in Anaconda, consumed the output of coal from the A. C. M. Co. mine at Belt.

The damage to the M. C. R. R. also had a depressing effect on the Cottonwood Coal Co.'s mine at Stockett, which mine reported a production of only 20,490 tons for the month of June.

The tonnage reported for our fiscal year, from October 31, one year to November 1, the next, was in 1907, 2,030,564 short tons of coal.

From October 31, 1907, to November 1, 1908, the production was 1,978,217 short tons of coal, or short of the year 1907 production of 52,217 tons.

The total number of men employed in 1907 was 3,229: Pick miners, 1,370; machine men, 217; loaders, 345; inside day men, 638; outside day men, 659; the average number of days mines worked, 206; and the average production, per day, per man employed, was 3.1+ tons.

The total number of men employed from October 31, 1907, to November 1, 1908, was 3,642; pick miners, 1,589; inside day men, 802; outside day men, 750; machine men, 176; loaders, 325; the average number of days mines worked, 194.5, and the average production, per man, per day, employed, was 2.79+ tons.

The production in 1907 would require about 1,354 trains of 30 cars to the train and 50 tons to the car to transport from the mines to the consumer.

The production of 1908 would require 1,319 trains, 30 cars to the train, 50 tons to the car to haul the coal from the mines to the consumer.

Owing to the financial panic, slump in the price of copper and the floods that prevailed in Montana the past year or so, the production was somewhat less than it would have been, and I think it would have been greater than in 1907 period, which was the largest in our history, in any one year.

Estimated Tonnage of Coal in Montana.

According to the estimates of Mr. M. R. Campbell, of the U. S. Geological Survey, the original coal supply of Montana was 303,060,000,000 short tons, from which there had been mined at the close of 1907 approximately 24,740,000 tons, representing an exhaustion, including waste in mining, of about 37,000,000 tons, or 0.012% of the original supply.

The coal mining industry of Montana, according to the best records available, began in 1880, in which year, according to the United States census, the production amounted to 224 short tons. It was not until 1889, however, that the industry assumed any importance.

The production increased nearly 800% (from 41,467 short tons in 1888 to 363,301 short tons in 1889.)

During the next six years development advanced rapidly until in 1895 it exceeded 1,500,000 tons.

From 1895 to 1905 the production remained practically steady, ranging from a minimum of 1,358,919 tons in 1904 to a maximum of 1,661,775 tons in 1900.

It increased to 1,829,921 tons in 1906 and exceeded for the first time 2,000,000 tons in 1907.

Coal Mine Inspectors' Conference.

An invitation was extended to all the coal mine inspectors in the United States to meet at some central point and discuss the conditions that obtain in the mines, explosions from gas, dust, powder, mine fires, in general the conditions and the difficulties that are experienced by the inspection forces. Indianapolis was selected as the meeting place for the first conference, the result of which meeting which was held June 9, 10, 11, 12, was an organization to be known as the Mine Inspectors' Institute of America.

It is proposed to meet annually hereafter. Scranton, Pa., was chosen as the place for meeting in June of 1909.

It is proposed to go in a body to Pittsburg, Pa., to visit and witness and take part in experiments that are being conducted, under the direction of the U. S. G. S.

Considerable of the time of the first conference was taken up perfecting a permanent organization, selection of officers, adoption of the Constitution and By-Laws of the Institute and scant time was allowed for the purpose for which it was called: however, we think it was the nucleus of an organization which may bring about a better understanding among the inspection forces of the different conditions that may arise and also be instructive in the manner in which any of those disasters may in part be overcome and in time averted.

While the invitations sent out intimated that no set speeches or papers were expected, yet we were treated to a few samples of both, which were interesting and instructive.

Pennsylvania, Ohio, Illinois, Indiana, West Virginia, Iowa, Missouri, Oklahoma and Montana were represented by delegates present in person and communications were read from several other inspectors regretting their inability to be present in person, but expressing confidence in and pledging their moral and financial support for the purposes for which the conference was called and the encouragement of the permanent organization, which was effected.

A very exhaustive and instructive paper was read by a noted chemist on explosives used in breaking down coal and photographs of flame generated by the same were exhibited to those present. Short talks on subjects pertaining to mining were made by several present on the different phases

that present themselves, and one paper read by district mine inspector of Iowa, Mr. John Vernor, on dust explosion in non-gaseous mines. Another paper by J. M. Gray, chief inspector of mines in Alabama, on atmospheric electricity, being the cause of so-called dust explosions.

Papers by Messrs. Roderic, Sr., and Jr., and Harrison, of Ohio, all of which was very instructive and interesting.

Experimental Station at Pittsburg.

Congress has appropriated \$150,000 to erect and maintain an experimental station for the benefit of the mining fraternity; they purpose to experiment with powder used in blasting down the coal in the mines, in the presence of dust and gas, build and equip in its minutest detail a miniature coal mine, fill this with smoke and put helmets or protectors on men and start them in for the purpose of drilling them in rescue work; they are already busy in the different coal fields gathering samples of dust, gas, etc. This is in line with the older mining countries that have established and are maintaining those stations.

This work that is being undertaken by our government will be of great benefit in that by those experiments it will be practically demonstrated that certain results will follow certain conditions.

It is fearful to think that human lives have to be or are being sacrificed to demonstrate that disastrous results will follow certain conditions in the mines, when the same object can be obtained, theoretically and practically by those experiments without the loss of life, if the teachings and lessons and no doubt, warnings, are heeded by those in charge of our coal mines. The mortality and accident rate among those who follow mining for a livelihood, will surely be decreased, as has been the case in the older mining countries, even though from the years of extensive mining, deeper workings, more gaseous mines and far worse conditions generally obtain in their mines than ours, for we have not gained very great depths as yet.

The only advantage that the foreign mines have over ours, to my mind, is the greater uniformity or unanimity in the language spoken. In Germany it is German; in France it is French; England, Scotland, Wales, it is the mother tongue, but in America, it may be likened to the building of the Tower of Babylon—a confusion of tongues.

Good Suggestion.

It was suggested, in a paper read by Mr. Roderic, Jr., of Pennsylvania, at the mine inspectors' conference that it would be a good idea to employ an intelligent one of each foreign gang of miners, i. e., conversant with our language, to look after and direct the work of his countrymen; an excellent idea to my way of thinking; the rules, regulations and usages of the mine and the mining laws would then be understood by all and on the whole, I believe it would be a safe paying investment.

The rapid growth of the coal mining industry and the enormous increase in the production of coal has of necessity caused our mines to become filled with inexperienced men.

The production of coal, leaping from being the lowest coal producing country in the world to the first, in 1820 we produced less than 500 tons. The sons of the coal miners of former years have been and are embarking in some other callings; this has thinned the ranks of the "Genuine Coal Miner."

Today we are educating "shooters." The bone of contention among mine inspectors is, the excessive use of explosives; some of the evils of which may be mentioned here; working up into and loosening the roof—knocking out timbers set under loose pieces of the roof; vitiating the atmosphere of the mine; pulverizing and wasting a valuable product; where there is bone or rock interstratified in the seam makes a dirtier product; necessitating the installing of expensive machinery for cleaning and separating the coal from the dirt.

This is not the feature that worries the coal mine inspector so much as the windy and blown out shots that cause disasters in the mine, especially is this so in mines that are generating C. H.₄ in variable quantities, and indeed in the absence of either dust or gas, disasters have happened in mines by the heavy blasting of powder and from gases generated by the explosion of powder.

"Statistics Showing the Enormous Growth of Coal Production."

According to E. W. Parker, statistician, in an article contributed to the Making of America, when the census was taken in 1820 the production of coal in this country was less than 500 tons, all of which was Pennsylvania anthracite; in 1870 Great Britain and Germany ranked ahead of the United States as coal

producing countries; at this time Great Britain first, from 1880 to 1890 the United States was second in the production of coal; the twelfth census of the United States reported a population of 76,303,387, reporting for that year a coal production of 269,684,027 short tons, or 3.53 tons for each inhabitant.

The production of coal for 1907 reported by the same authority, E. W. Parker, Statistician, U. S. G. S., was 480,360,000 short tons.

With an average of 30 cars to the train and 50 tons of coal to the car, the number of trains required to transport this product was 320,300.

The combined length of those trains would extend two and two-thirds times around the world at the equator.

The hole left in the ground by the extraction of this fuel is equal to 17,585,000,000 cubic feet, and if the entire quantity of coal extracted were built into one cube it would have the dimensions of 2,605 feet, or nearly half a mile on each edge.

A rectangular column with a 1,000 foot base to represent the coal production of the United States in 1907 would extend nearly 3.4 miles into the air.

The total value of the coal produced in the United States at the mines in 1907 was nearly \$615,000,000.

THE PREVENTION OF MINE EXPLOSIONS. REPORT.

TO THE HONORABLE

THE SECRETARY OF THE INTERIOR.

Sir: In response to your request that we co-operate with the United States Geological Survey in the inauguration of its investigations looking to the prevention of mine explosions, and that we submit for the consideration of those connected with the coal mining industry in the United States such recommendations as experience in our own countries and observation among American coal mines indicates may be useful in providing for greater safety, we beg to submit the recommendations given below.

Since coming to the United States, we have given careful attention to and approve the investigations in relation to this subject begun by the Geological Survey. We have visited typical mines in the more important coal fields of the United States

and have discussed the mining problems with many coal operators, miners and State inspectors.

To be effective, investigations for the benefit of mining must be continuous. The opening up of new mines, the deepening of old mines, the meeting with new conditions, the changing of explosives, and the inauguration of new processes and methods will call for continuous investigations, to be followed by continuous educational work.

Our investigations and recommendations relate primarily to questions of safety in mining; but in this connection we have been greatly impressed with another closely associated phase of the industry, viz, the large and permanent loss of coal in mining operations in many portions of the United States. This is a serious, permanent and national loss. It seems to be a natural outcome of the ease with which coal has been mined in the United States and the enormously rapid growth of the industry.

The active competition among the operators and the constant resulting effort to produce cheaper coal has often naturally led to the mining of only that part of the coal which could be brought to the surface most easily and cheaply, leaving underground, in such a condition as to be permanently lost, a considerable percentage of the total possible product. Certainly much of this loss can be prevented through the introduction of more efficient mining methods, such as the long wall system, more or less modified, the flushing method. (See "H" 7, p. 10.)

In the preparation of these recommendations we have recognized fully the great difference between the mining conditions in Europe and those in America, where the industry has developed so rapidly that thorough organization has not yet been possible; where a large percentage of the men entering the mine are unfamiliar either with mining methods or the English language; and where the price of coal at the mine is less than half that in Europe. Nevertheless, we believe that these recommendations will be found useful in the further development of the American coal mining industry for safety and efficiency. The cordial reception everywhere accorded us leads us to believe that these recommendations will be received by the operators and miners in the same spirit of good will as that in which they have been prepared. But the success of this movement for greater safety and efficiency will depend upon the hearty and

patient co-operation of the operators and the miners, working together for the accomplishment of this purpose.

Recommendations.

A. Selecting the explosives to be used.

(1) We recommend that the Government of the United States examine the explosives now and hereafter used in mining, with a view to eliminating the more dangerous explosives and to improving and standardizing such explosives as may be considered most suitable for such use, these to be designated by the Government "permissible explosives."

The term "permissible explosives" is suggested for the reason that no explosives are entirely safe, and all of them develop flame when ignited; and we advise therefore against the use in the United States of the terms "safety explosives" or "flameless explosives," as these terms may be misunderstood and this misunderstanding may endanger life.

(2) We recommend that the operators and miners of coal use only such explosives as are included in a list of "permissible explosives," when the same has been published by the Government, in all mines where there is risk of igniting either dust or gas selecting that one which their own experience indicates can be used to the best advantage under local conditions.

(3) We also recommend that investigations be conducted to determine the amount of charge of such "permissible explosives" which may be used to advantage under different conditions with a view to reducing danger to the minimum.

Carrying the Explosives Into the Mines.

(1) All explosives should be made into cartridges and placed in closed receptacles before being carried into the mine, and the quantity carried into the mine during one day by any miner should be limited as nearly as practicable to the quantity needed by him for use during that day. Handling loose explosives and making them into cartridges by an open light in the mine should be prevented.

(2) Detonators or caps should be handled with great care and should be carried only by a limited number of responsible persons.

C. Use of Explosives in Mine.

(1) Shooting in or off the solid should not be practiced.

(2) The depth of the shot hole should be less by at least 6 inches than the depth of the cutting or mining. The use of very deep shot holes should be avoided as unnecessarily dangerous.

(3) The overcharging of shots (the use of a larger charge than is required to do the work satisfactorily) should also be avoided as unnecessary and dangerous. The proper standardization of explosives used in coal mining will greatly facilitate the carrying out of this recommendation. (See also "A." 1.)

(4) Shots should never be tamped with fine coal or material containing coal. Clay or other suitable material should be supplied and used for this purpose.

(5) The firing of two or more shots in one working place, except simultaneously by electricity, should not be allowed until a sufficient interval has elapsed between the firings to permit an examination of the working place, in order to see whether any cause of danger has arisen.

(6) Before a shot is fired the fine coal should be removed from the working place, as far as practicable, and the coal dust on the floor, sides and roof, for a distance of at least 20 yards from the place where the shot is to be fired, should be thoroughly wet, unless it has been demonstrated that the dust in the mine is not inflammable. (See also "E." 1.)

(7) If gas is known to occur in the mine, no shot should be fired until, in addition to the watering, an examination made immediately preceding the time for firing, by a competent person, using a lamp which will easily detect 2 per cent of gas, has shown the absence of that amount of gas from all spaces within 20 yards of the point where the shot is to be fired.

(8) Believing that such will be one of the greatest advances which can be made in safeguarding the lives of the miners, we recommend the adoption of a system of electric shot firing in all mines where practicable, by which all shots in the mine, or in each ventilation district of the mine, may be fired simultaneously, at a time when all miners and other employes are out of the mine.

D. Keeping the Mine Roadways Clean.

(1) The roadways of the mines should be kept as free as possible from loose coal which may be ground into dust and of rubbish in which such dust may accumulate, in order to facil-

itate the removal and wetting of the dust.

E. Wetting the Coal Dust.

(1) In all coal mines where explosives are used it is desirable, and in all mines containing gas it is highly important, that the dust on the walls, timbers, and floors of the working places and roadways should be kept continually wet prior to and during the work in the mine. If, however, conditions of roof or lack of water render this general watering impracticable, at least the dust within 20 yards of each shot should be wet before each firing, and other precautions against explosions should be practiced with usual care.

It is our opinion that a system of watering which occasionally sprinkles the floor only and leaves dry the dust on the walls and timbers of the roadways is useless and is also dangerous in that it may generate an unwarranted feeling of security against an explosion.

F. Special Precautions for Mines Containing Gas.

(1) In any mine where as much as 2 per cent of gas can be detected by suitable method only locked safety lamps of an approved type should be used so long as such condition exists or is likely to recur.

All safety lamps should be maintained in good condition, cleaned, filled, kept in a special room at the surface, and carefully examined both when delivered to the miner and when returned by him at the close of each day's work. A defective safety lamp is especially dangerous because of the false feeling of security it engenders.

In the filling of lamps with benzine or other low-flash oils, which should always be done at the surface, special precautions against fire or explosions should be taken.

G. Use Electricity.

(1) Electricity in mining operations offers so many advantages, and has been so generally adopted, that no reasonable objection can be made to its use under proper restrictions. The electrical equipment, however, should be installed, maintained, and operated with great care, and so safeguarded as to minimize danger from fire or shock. The fact that the effectiveness of some insulating materials is soon destroyed in most mines should not be lost sight of.

We recommend the following precautions: For distribution underground the voltage should not exceed 650 direct current or 500 alternating current, these voltages being intended for transmission to machinery operating at 500 volts direct current and 440 volts alternating current, respectively. Even lower voltages are preferable. The trolley wires should be installed in such manner as to render shocks least likely; that is placed either high enough to be beyond easy reach or at one side of the track and properly protected.

Where current at a potential of more than 650 volts is employed for transmission underground, it should be transmitted by means of a completely insulated cable; and where a lead or armored covering is used, such covering should be grounded.

In all mines having electric installation special precautions should be taken against the setting on fire of coal or timber. Inclosed fuses or cutouts are recommended, and each branch heading should be so arranged that the current may be cut off when necessary.

No live electric wire should be permitted in that part of any mine in which gas is found to the amount of 2 per cent.

In all mines producing gas in dangerous quantities, as indicated by a safety lamp which will detect 2 per cent of gas, the working places should be examined for gas by a qualified man, using such a lamp, immediately before any electric machine is taken or operated there.

H. Precautions Against Miscellaneous Accidents.

(1) In all new construction, shaft lining and superstructures about the entrance of the shaft (or slopes or drifts) should be built as far as practicable of non-combustible materials.

About the entrances to mines every possible precaution should be taken to prevent fires or the injury of the equipment for ventilation and haulage. Ventilating fans should be placed at one side of the mine opening, and hinged doors or light timbering should render easy the escape of the explosive force in direct line of the shaft or slope.

Proper precautions should be taken for immediately preventing the entrance into the mine of heat and gases and for facilitating the escape of the men in case of surface or shaft fires.

(2) The surface equipment for handling the coal should

be so arranged as to prevent coal dust from entering the mine shaft..

(3) In all new mines, and in all old mines as far as practicable, suitable man roads should be provided for the men separate from the main haulage roads.

(4) In connection with the system of ventilation it is recommended that in the more frequented roads connecting the intake with the return air courses, two doors be provided, these doors to be placed at such a distance apart that while one is open the other is closed.

(5) In view of the large number of accidents from falls of coal or roof, under the existing practice with single props, more attention should be given to the introduction in mines where the roof is bad of better systems of timbering, such as have been long in use with economy and safety in many well managed mines.

(6) In undercutting coal by hand, the premature fall of the coal should be prevented by sprags or other suitable supports.

(7) We believe that the difficulties and dangers encountered in the working of coal seams which are thick and steeply pitching, or of which the coal is highly inflammable in character or subject to firing from spontaneous combustion, and in mines where the substance of the surface must be avoided, may be successfully and economically overcome in many cases through the adoption of the flushing system of mining—that is, the filling—that is, the filling with sand or other suitable materials of the space from which the coal is removed. This system originated in the United States and is now successfully practiced in portions of Germany, Austria, Belgium and France.

1. Mine Supervision and Inspection.

(1) We can not too strongly emphasize the fact that thorough discipline about the mine is absolutely essential to safety, and that thorough discipline can be brought about only through the hearty co-operation of the operators, the miners and the State.

(2) We are of the opinion that the responsibility for safety in the mine should primarily rest with some person, such as the manager or superintendent, clothed with full authority; and that such person can greatly facilitate the attainment of safety through the employment of a sufficient number of fore-

men, and also of one or more inspectors whose special duty it shall be to see that the regulations are strictly enforced.

(3) The State can not exercise too much care concerning the experience, technical training and selection of its inspectors. Their positions should be made independent of all considerations other than that of efficiency; and their continuance in the service should be expedient with good behavior and proper discharge of official duty.

1. Training for Mine Foremen, Inspectors, etc.

We are of the opinion that the cause of both safety and efficiency in coal mining in the United States would be greatly aided through the establishment and maintenance in the different coal regions of special schools for the training of fire bosses, mine foremen, superintendents, and inspectors. The instruction in such schools should be practicable rather than theoretical.

The work of these schools would supplement most effectively that of the colleges already established in many parts of the country for the more thorough training of mining engineers.

VICTOR WATTEYENE,

Inspector General of Mines, Belgium.

CARL MEISSNER,

Councillor for Mines, Germany.

ARTHUR DESBOROUGH,

H. M. Inspector of Explosives, England.

Recommendations.

That all Coal Mine Managers, Superintendents, Foremen, Fire Bosses, Examiners, whether the mines be rated as gaseous or not, be required to undergo examination before an Examining Board, and secure Certificates of Competency.

That a law be passed, patterned after the Illinois law, that a miner should be examined and demonstrate his qualifications, before being employed to work in the mines, as miner.

That the duties of Superintendent, Foreman, Fire-Boss, Examiner, Miner, Driver, Trip-Rider, or runner, Engineer, Fireman, Fan Engineer, Furnaceman, Cager, Top-man, be defined and prescribed by law.

There should be defined by the Statutes what is meant by the term Coal mine, Excavations and workings, Shaft, Slope, Drift, Operator, Superintendent, Foreman, Fire-Boss or Ex-

aminer, etc., or any other mining term pertaining to mining not here enumerated.

Penalties prescribed for violation of or the non-performance of the requirements of the statutes and where consistent, to be fine and imprisonment, so as to avoid whenever possible, the resort to an injunction.

Outlets, Maps and Plans should receive the attention of the Legislature, aside from the purpose that the Inspector could familiarize himself with the inside workings of the mine, there is a very important purpose of a correct mine map, that the map should show the surface lines, section numbers, township, range, etc., and that all maps of the mines, sent to the Inspector should be uniform scale and complete in every detail, so that it would be readily ascertained whether properties adjacent to, were liable to break into one another and cause loss of life or destruction of property or both and such maps and plans should be prepared by a competent Mining Engineer, and certified to as to its correctness.

Sections 3353, 3354 of the Pol. Code of Montana, with reference to escapes are rather indefinite and should be revised so that not more than 8 men should be allowed to work in any mine on any one shift until there is a second opening to the surface.

Under this same head, outlets, I believe that the Statutes should insist upon stamping out as far as possible the method employed in some of our Coal mines to evade the responsibility and expense of keeping open air-ways, where double entries are driven, of driving places through from one entry or lift to another, and abandoning or allowing the air-course to fill up and close.

This is very often the case and sometimes it would, perhaps, be reasonable to allow this practice, but there should be some restraint placed upon it, the owners and operators of coal properties are not as particular or careful in maintaining the air-course or back entry as the main entry, and especially is this so, if the vein is a pitching one and the back entry driven for ventilation purposes and there are no producing rooms or entries driven on them.

Whenever it becomes expedient to cut off one of the air-courses and use the same entry for intake and return, i. e., the

outside end of the entry used for intake and a door hung upon the main entry to divert the current to the back entry and then return out on the main entry again, it should be absolutely compulsory to place two doors upon the entry, with door tender at each door, and the doors to be placed far enough apart so that it will never become necessary to open both at one and the same time to allow of the trips passing through.

To still further safe-guard and keep the air-course open—and the dimensions should not be less than the haulage way—the law should provide that where 10 men are working in any one entry the air-course must be maintained and kept in good condition for the air to travel in, and for men to travel to and from their work, and for an escape way from that part of the mine should it become necessary.

If we are to provide against just such disasters as occurred in one of our mines recently, we must insist upon at least two entries being driven and kept open both for air and travel way, kept clear of falls, drained of water and always ready for use and emergencies.

Hoisting Machinery, Safety Catches, Signalling Apparatus, Code of Signals for Coal Mines, should receive legislative attention.

There should be a law compelling companies to put in some means of quick signalling or communication to warn miners and other employes of impending dangers.

Ventilation.—As our mines are gaining in depth and some are generating fire-damp, our present law will be found inadequate to meet changed conditions and I believe the law should designate at least 150 cubic feet per minute as the minimum where gases are given off.

Ventilating fans should receive some attention, the law prescribing just when they should be run and stopped under any and all circumstances.

Overcasts and air bridges should be driven in the solid strata, built of masonry or other incombustible material, and no other.

Safety lamp, fire-bosses, etc., should receive very careful consideration, as it is one of the most important subjects connected with coal mining, in fact, it embraces all of it or them; the qualifications of the fire-boss or examiner should be defined

and prescribed by law, his duties in every conceivable particular outlined, his authority should be set out in our laws, the time for examination of working places before the men are permitted to go to work, evidence of his visit in working places, how he shall be permitted to remove any gases found in working places, records to be kept of the conditions as he finds them, examination of the air currents and passages, brattices, etc. These are a few of the many subjects, care of safety lamps and many other phases of the work properly in his department.

Penalties for passing danger signal, having had some trouble on that score in the past few months where men deliberately passed over danger signals or warnings of the fire-boss, we earnestly urge that stringent laws be passed to cure this evil, fine and imprisonment penalties for anything of this kind.

Whenever it becomes necessary for any miner to work on any current of air with a safety lamp the law should prohibit any naked or open light being used on that current of air.

Any part of the mine where it is necessary to work with a safety lamp the use of electric wires and electric currents should be positively prohibited, unless wires and machinery connected therewith are protected in such a manner as to secure freedom from the emission of sparks or flame into the atmosphere of the mine.

Bore Holes.—In approaching workings supposed to contain water or inflammable gases, bore holes should be kept straight ahead and flank bore holes drilled, the distance ahead and apart and also the width of the place driven should be set forth in our laws.

Mine Foreman and His Duties.—These should be described in the statutes, to look after the ventilation of the mine, devote the whole of his time to his duties in the mine when in operation, keep a careful watch over the ventilation apparatus and the air-ways, travel-ways, timbering, pumps, drainage, visit and direct the working places at least every day when the men are working, see that timber cut and squared of the desired lengths are delivered to the room end, to see that cross cuts or breakthroughs are driven regularly, not more than 20 yards apart and closer if necessary, and that the air-current is being conducted through, shall not permit the opening of any room or entries inside the ventilating current, and on the haulage way where

men have to travel to and from their work, to see that there are holes for shelter and that they are white-washed and kept free from obstruction, said holes to be not farther than 25 yards apart, except where there is a space between the rail and the rib of 3 feet, then this would be considered sufficient passage-way.

The Foreman should measure the aircurrents at least once a week, at the inlet and outlet and at the last crosscut at the face of the entries, keep records of measurements and report same monthly to the inspector.

He should give prompt attention to the removal of all dangers reported to him by fire-boss and others working in the mine.

Such other duties as would help to increase the safety and comfort of the men working in the mine should be set out in the statutes.

Duties of Superintendent.—To keep on hand on behalf and at the expense of the operator, a full supply of all materials and supplies required to preserve the health and safety of the employees.

He should examine and countersign the report of the condition of the mine by the foreman and fire-boss examiner, and if he finds that the law is being violated in any particular, to order the foreman to comply with its provisions forthwith. If for any reasons supplies cannot be procured to better the place or keep them in safe condition, then the men are to be withdrawn from that part of the mine until supplies are at hand.

The Superintendent of the mine should not obstruct the mine foreman or other officials in their fulfillment of any of the duties prescribed by law.

Examining Boards, how constituted, by whom appointed, their duties, powers, etc.

Employment of boys and females.

Stretchers are to be kept at mines in convenient places.

Emergency hospitals, supplies for same to be kept on hand.

Recovery of bodies entombed in the mine.

When and how the accumulations of dust are to be treated, sprinkled or wetted and roadways cleaned up and kept free as far as possible from small coal.

Statistical Information.—Make it compulsory by law to

answer correctly the interrogatories sent out by the department.

The notification by Foreman or Superintendent whenever a serious or fatal accident occurs in or around the mine and the conditions to remain the same until the inspector can make an examination of the place.

Coroner's inquest to be made obligatory upon all bodies fatally injured or killed in or around mines.

General rules for the government of the mine to be gotten out and printed in the different languages of those employed, where there are 10 men of one nationality.

Storing of Powder in the Mine.—How much may be permitted to be taken in the mine by one man, how kept, handled, use of squibs, how many shots may be fired at one time, missed shots, copper tools, kind and quality of tamping allowed, and the charge limit of powder.

Barrier Pillars.—Should be left between adjoining properties.

Prohibiting the carrying of powder, tools, timber or any other material on man-trips, on slopes, levels, or on cages, cars, where and when men are being taken to and from their work.

Penalties for the overloading of cars on man trips both for men and those in charge.

Thawing dynamite in the mine.

Those suggestions if favorably considered by the Legislature could, and should be arranged under appropriate caption and the suggestions pertaining to each particular subject might receive consideration in the order of their merit.

Owing to the geographical location of the coal mines and their numbers increasing that should be inspected, there should be a deputy coal mine inspector. Personally I have no preference how or by whom appointed, but do believe he should be subject to the orders of and report as often as required to the State coal mine inspector. If the revenue is desired raised for the expenses of this department it could be done by placing one-quarter of one per cent per ton on the gross coal mined; this would raise a revenue of about 5,000 per year, based on the production of 1907.

I have gone into detail with some of the things I think necessary in order to call your attention to the importance of a thorough revision of our coal mine laws; we are emerging from

the experimental stage in coal mining in Montana and our experience is, and the advice of those eminent experts that have visited some of our mines—a copy of whose recommendations are submitted herewith—that the responsibility for safety in the mines should primarily rest with some person, such as the Manager or Superintendent, clothed with full authority; and that such person can greatly facilitate the attainment of safety through the employment of a sufficient number of foremen and also one or more inspectors whose special duty it shall be to see that the regulations are strictly enforced.

It is in line with this that we suggest the propriety at this time of a complete and thorough revision of our mining laws; meet the conditions that confront us, let us be fair and frank in dealing with laws for the better protection of the miners and mine property; let there be no vague, indefinite laws introduced that are known to be useless, misleading and ineffective; on the other hand let there be reason, prudence and caution exercised in the revision. We must keep in mind the lives and safety and comfort of those employed and at the same time we should not inflict any undue, unjust hardship upon those employed or engaged in the production of coal in this State, that would hamper them in competition with neighboring coal producing States in securing the right and privilege of supplying our own State with the fuel necessary for present needs and an increasing demand for the future.

Lives and limbs have been paid too freely for the production of coal in Montana; let us substitute dollars in payment for its production and give a blessing to the homes of the miner instead of a curse, and we believe with the present prices paid by the consumer for coal—with a readjustment that should be made—the middle man with the margin of from \$1.50 to \$2.00 and better sometimes, eliminated, re-arrange it that this margin might be shared mutually between the operator, miner and consumer.

Respectfully submitted,

Certificates of Competency.

It affords this department considerable pleasure and satisfaction to note the interest manifested by some of the miners who have desired to demonstrate their fitness and experience and applied for Certificates of Competency.

As stated in our biennial report for 1905 and 1906, realizing

the expense and inconvenience to applicants that would attend an enforced visit to the Coal Mine Inspector's office at the capitol, examinations were conducted at the different coal mining towns when visited by the inspector on the regular rounds of inspection.

The following have been granted Certificates of Competency by this department:

S. M. Moore, Great Falls.
John Walker, Chestnut, Mont.
Hirst Beever, Chestnut, Mont.
William Haggerty, Red Lodge, Mont.
John Good, Bridger, Mont.
Charles Sederholm, Bridger, Mont.
C. C. Fenwick, Bridger, Mont.
Charles Williams, Aldridge, Mont.
Thomas J. Thomas, Aldridge, Mont.
Thomas J. Evans, Chimney Rock, Mont.
Otto Anderson, Chestnut, Mont.
William R. Reese, Red Lodge, Mont.
Joseph Cadwell, Chestnut, Mont.
John Leslie, Stockett, Mont.
J. M. Sampson, Dietz, Wyo.
Charles P. Keyes, Bridger, Mont.

In the examinations conducted by this department since November 28, 1905, the list of questions asked and the answers are kept on file in the office. The percentage required to be obtained by each applicant is 75%.

We have not limited the examinations to those holding positions as foreman, but hold them at any time and place, whenever any miner makes application for same.

We do this to encourage men to qualify in their line of work and better equip themselves to protect themselves and their comrades.

Examination of Mine Scales.

Several times during the past two years the department has been called upon to make tests of scales used in the weighing of miners' coal, and the department found it absolutely necessary to procure test weights for this purpose, which it has done and we have now belonging to the department 2,000 pounds, 40—50 pound weights. We have stored 1,000 pounds of them in Carbon county and 1,000 pounds in Cascade county; this

was thought best in order to save freighting them so far and to have them easy of access when they were needed.

Without going into detail of the examinations made of the different scales, would say that, so far, every pair of scales tested we have done so in the presence of representatives of miners and the company.

Among those inspected by the department were the scales at Bridger, Coalville, Havre, Belt, Red Lodge.

In one or two instances the difficulty was the difference between the dial and beam and we think it more a matter of the weakening of the spring on the dial than anything else.

The department received a call from Bear Creek Miners' Union to come to Bear Creek and make an examination of the scales there; the request did not state whether it was the scales of the Bear Creek Coal Company, Montana Coal and Iron Company, International Coal Company, or the Smokeless and Sootless Coal Company.

The law specifies that upon the written request of any coal operator, or owner, or ten coal miners employed at any one mine, it shall be the duty of the State Coal Mine Inspector to test scales. * * * * *

A marked copy of the law with reference to this section was sent to the Union asking for a more definite request.

We make this explanation here so that the department will not be misunderstood, as we are perfectly willing to cart the weights from one mine to another to test the scales at any time there is an apparent reason for it, but our territory is pretty large, mines scattered, and to attend to the regular inspection of mines, accidents, coroners' inquests, etc., the department must husband its time and cannot afford to play hide and seek when there are so many other duties to perform.

Examination of State Lands for Coal Purposes.

Several times during the past two years this department has been requested by the State Board of Land Commissioners to visit and report to them upon lands that are supposed to be underlain with coal, with a view to leasing same on the royalty basis, notably at Moore, Lloyd, and Roundup.

The above named duties have been attended to by our department whenever called upon to do so, and we hope to the satisfaction of the State Board of Land Commissioners.

Reports of each visit and property inspected have been filed with the land office.

Establishment and Maintenance of Wash Houses for the Miners.

There is no law upon the Statute Books of Montana that would be of such accommodation to the miners, and especially is this so where the workings are wet, saving the men from going out in the cold weather with wet clothes on them, as the establishment and proper maintenance of the wash houses.

The companies, generally, have complied with the law as far as establishing the wash houses, but I must say that some of those in charge seem to think it their duty and privilege to ignore the part of the law pertaining to heating, lighting and cleaning same.

The department has had more complaints from this source than from almost any other and so far we have refrained from commencing proceedings in the courts, but we are and always have been of the opinion that whether it would stand in the courts or not; they are needed about a mine and the cost of supplying heat, light, hot and cold water and keeping it clean would be nominal.

It certainly does not reflect credit upon any superintendent in charge of coal mines that have built the wash houses to eke out their petty spite and ignore a proposition so meritorious.

We want to say now, that ere long some of those fellows who have been warned by this department frequently will have a chance to test the legality of the wash house bill in the courts if they persist in ignoring the law.

Production of coal in Carbon county from October 31, 1906, to November 1, 1907:

Loaded for shipment	675,335 short tons.
Sold to local and employees.....	14,201
Used at the mines	44,908

Total production.....734,444 short tons.

Number of days mines operated.....2,387

Number of pick miners employed..... 750

Number of inside day men employed..... 250

Number of outside day men employed.....233

Number of Machine men employed..... 20

Number of loaders employed..... 23

Total employed.....1,276

Number of accidents in Carbon county during the same period, causes:

Killed by falling roof and coal.....	4
Killed by mining machine.....	1
Injured by moving cars.....	9
Injured by falling roof and coal.....	11
Injured by falling timber.....	1
Injured by cable.....	1
Injured by mining machines.....	1
Injured working in scale pit.....	1
Injured by powder charged hole.....	1

Total killed, 5; injured, 25.

Production of coal in Cascade county from October 31, 1906, to November 1, 1907:

Loaded for shipment.....	1,020,029 short tons
Sold to local and employees...	21,442
Used at the mines	26,783

Total production.....1,068,257 short tons.

Number of days mines operated.....	2,306
Number of pick miners employed.....	154
Number of inside day men employed	239
Number of outside day men employed.....	204
Number of machine men employed	197
Number of Loaders employed.....	312

Total employed1,106

Number of accidents in Cascade county during same period, causes.

Killed by moving trip	1
Killed by falling roof or coal.....	2
Killed by hoisting engine	1
Epileptic subject died in mine	1

Injured by falling roof or coal	3
Injured by mining machines	2
Injured by being blasted with powder	1
Injured no causes given	3

Total Injured 9

Production of coal in Choteau County, from Oct. 31, 1906, to November. 1, 1907.

Loaded for shipment	9,707 short tons
Sold to local and employees.....	3,242
Used at the mines	820
Total production	13,769 short tons.
Number of days mines operated.....	1,285
Number of pick miners employed	42
Number of inside day men employed	8
Number of outside day men employed	19
Number of machine men employed	
Numbers of loaders employed.....	
Total employed	69

Number of accidents in Choteau County, during the same period, causes.

No accidents reported

Production of coal in Custer County, from Oct. 31, 1906, to Nov. 1, 1907.

Loaded for shipment	7,070 short tons.
Sold to local and employees.....	72
Used at mines	
Total production	7,142 short tons.
Number of days mines operated	300
Number of pick miners employed.....	6
Number of inside day men employed	2
Number of outside day men employed	1
Number of machine men employed	
Number of loaders employed	
Total employed	9

Number of accidents in Custer County, during the same period, causes.

No accidents reported.

Production of coal in Fergus County, from Oct. 31, 1906, to Nov. 1, 1907.

Loaded for shipment	24,563 short tons.
Sold to local and employees.....	9,409
Used at the mines.....	750
Total production	34,722 short tons.
Number of days mines operated	1,776

Number of pick miners employed.....	83
Number of inside day men employed ...	15
Number of outside day men employed ...	22
Number of machine men employed	
Number of loaders empolyed	4

Total employed124

Number of accidents in Fergus county during, same period, causes.

No accidents reported.

Production of coal in Gallatin County ,from Oct. 31, 1906, to Nov. 1, 1907.

Loaded for shipment	54,449 short tons.
Sold to local and employes	785
Used at the mines	9,798
Made in to Coke	14,074
Total production	79,106 short tons.

Number of mines operated	354
Number of pick miners employed	123
Number of inside day men employed...	51
Number of outside day men employed...	80
Number of machine men employed.....	
Number of loaders employed	6

Total employed260

Number of accidents in Gallatin County, for the same period, causes.

Killed, suffocated in fine coal bin	1
Injured, powder charged hole (blasted) ...	1
Injured falling coal and roof	2
Injured by cable	1
Injured by explosion of gas	3
Injured by falling timber	1

Total Injured 8

Total Killed 1

Production of coal in Park County, from Oct. 31, 1906, to Nov. 1, 1907.

Loaded for shipment	33,221 short tons.
Sold to local and employees	1,287 short tons.
Used at the mines	3,713 short tons.
Made into coke	53,453 short tons.

Total production91,674 short tons.

Number of days mines operated	1,214
Number of pick miners employed	210
Number of inside day men employed....	73
Number of outside day men employed..	64
Number of machine men employed	
Number of loaders employed	

Total employed 347

Number of accidents in Park County, during the same period, causes.

Killed by falling roof	1
Injured by falls of roof and coal	5
Injured by falling timber	1
Injured by electric hoist	1
Injured by machinery	1
Injured by moving cars	4

Total injured 12

Total killed 1

Production of coal in Valley County, from Oct. 31, 1906, to Nov. 1, 1907.

Loaded for shipment	
Sold to local and employees	300 short tons.
Used at the mines	

Total production 300 short tons.

Number of days mines operated	60
Number of pick miners employed	2
Number of inside day men employed ...	
Number of outside day men employed ...	
Number of machine men employed	
Number of loaders employed	

Total employed 2

Number of accidents in Valley County, during the same period, causes.

No accidents reported.

Production of coal in Yellowstone County, from Oct. 31, 1906, to Nov. 1, 1907.

Loaded for shipment	58 short tons.
Sold to local and employees	32
Used at the mines	60

Total production 150 short tons.

Number of days mines operated	
Number of pick miners employed	
Number of inside day men employed	
Number of outside day men employed	
Number of machine men employed	
Number of loaders employed	
Total employed	

Prospecting, opening up mine.

Number of accidents in Yellowstone County, during same period, causes.

No accidents reported.

Production of coal in Carbon County, from Oct. 31, 1907, to Nov. 1, 1908.

Loaded for shipment	836,269 short tons.
Sold to local and employees ..	19,400 short tons.

Used at mines	65,800 short tons.
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Total production	921,469 short tons.
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Number of days mines operated	2,112
Number of pick miners employed	966
Inside day hands employed	336
Outside day men employed	308
Machine men employed	13
Loaders employed	42

Total employed	1,665
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Amount of black powder used in blasting down the coal	699,704 lbs.
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Amount of dynamite used in blasting down the coal	5,280 lbs.
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Number of accidents in Carbon County, for same period, causes.

Killed by moving cars	2
Falling roof and coal	5
Riding picking table	1
Premature blast of Dynamite	1

Total killed	9
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Seriously injured, by falling roof and coal..	19
Injured by moving cars	7
Injured by mining and drilling machines	2
Injured by being scalded	1
Injured by a powder charged hole (blasted)....	3

Injured by riding feeder, rock belt 1

Total injured 33

Production of coal in Cascade County, from Oct. 31, 1907,
to Nov. 1, 1908.

Loaded for shipment 739,965 short tons.

Sold to local and employees . 26,422

Used at the mines 25,605

Total production 791,992 short tons.

Number of days mines operated 2,358.5

Number of pick miners employed ... 153

Number of inside day men employed 260

Number of outside men employed.. 204

Number of machine metn employed . 161

Number of loaders empolyed..... 283

Total employed 961

Amount of black powder used in breaking down the
coal 329,729 lbs.

Amount of dynamite used in breaking down the
coal 31,645 lbs.

Number of accidents in Cascade County during the same
period, causes.

Killed by falling roof and coal 2

Seriously injured by falling coal and roof.. 3

Injured by moving cars 3

Injured by powder charged hole, (blasted) 1

Total injured 7

Total killed 2

Production of coal in Choteau County from October 31, 1907,
to November 1, 1908.

Loaded for shipment..... 5,082 short tons.

Sold to local and employees..... 13,750

Used at the mines..... 295

Total production..... 19,127 short tons

Number of days mines operated 1,394

Number of pick miners employed..... 33

Number of inside day men employed..... 10

Number of outside day men employed..... 8

Number of machine men employed.....

Number of loaders employed.....

Total employed..... 51

Amount of black powder used in breaking down
the coal21995 pounds.

Amount of dynamite used in breaking down the coal.....

Number of accidents in Choteau county during the same period,
causes.

No accidents reported.

Production of coal in Custer County from October 31, 1907,
to November 1, 1908.

Loaded for shipment.....None.

Sold to local and employees.....11,535 short tons

Used at mines..... 37 short tons

Total production.....11,572 short tons

Number of days mines operated 778

Number of pick miners employed..... 17

Number of inside day men employed..... 3

Number of outside day men employed..... 3

Number of machine men employed..None.

Number of loaders employed.....None.

Total employed 23

Amount of black powder used in breaking down
the coal8,875 pounds

No accidents reported.

Production of coal in Fergus County from October 31, 1907,
to November 1, 1908.

Loaded for shipment.....40,231 short tons.

Sold to local and employees14,877 short tons.

Used at the mines..... 1,240 short tons.

Total production.....56,348 short tons.

Number of days mines operated.....2,378

Number of pick miners employed..... 97

Number of inside day men employed 20

Number of outside day men employed..... 16

Number of machine men employed..... 2

Number of loaders employed.....

Total employed..... 135

Amount of black powder used in breaking down
the coal15,351 pounds.
Amount of dynamite used in breaking down the coal
No accidents reported.

Production of coal in Gallatin County from October 31, 1907,
to November 1, 1908.

Loaded for shipment.....19,335 short tons.
Sold to local and employees..... 1,101 short tons.
Used at the mines..... 9,217 short tons.

Total production.....29,653 short tons
Number of days mines operated 336
Number of pick miners employed.....113
Number of inside day men employed..... 28
Number of outside day men employed..... 47
Number of machine men employed.....
Number of loaders employed.....

Total employed.....188

Amount of black powder used in breaking down
the coal50 pounds.
Amount of dynamite used in breaking down
the coalNone.

Number of accidents in Gallatin County for same period,
causes.

Injured by explosion of gas.....1
Injured by falling coal.....1

Total injured.....2

Production of coal in Park County from October 31, 1907,
to November 1, 1908.

Loaded for shipment..... 99,858 short tons.
Sold to local and employees.... 1,425 short tons.
Used at mines..... 6,349 short tons.

Total production.....107,632 short tons.

There was made into coke and shipped from this amount
29,482 tons of coke.

Number of days mines were operated 95
Number of pick miners employed165
Number of inside day men employed.....129
Number of outside day men employed.....124
Number of machine men employed.....
Number of loaders employed.....

Total employed.....418

Amount of black powder used in breaking down
the coal23,603 pounds.

Amount of dynamite used in breaking down coal..10,480 pounds.

Number of accidents in Park County for the same period,
causes.

Killed by hook on block and tackle breaking.....1

Injured by falling timber.....2

Injured by falling roof and coal.....2

Injured by moving cars.....2

Injured by miner's pick.....1

Injured by powder charged hole (blasted).....1

Total killed, 1; injured, 8.

Production of coal in Valley County from October 31, 1907,
to November 1, 1908.

Loaded for shipment..... 35 short tons. ,

Sold to local and employees.....1,161 short tons.

Total production.....1,196 short tons.

Number of days mines operated 360

Number of pick miners employed..... 6

Number of inside day men employed..... 1

Number of outside day men employed.....

Number of machine men employed.....

Number of loaders employed.....

Total employed..... 7

Amount of black powder used in breaking down
the coal.....3,683 pounds.

Amount of dynamite used in breaking down the
coal..... 150 pounds.

No accidents reported.

Production of coal in Yellowstone County from October 31,
1907, to November 1, 1908.

Loaded for shipment.....35,461 short tons.

Sold to local and employees 414 short tons.

Used at the mines..... 3,483 short tons.

Total production.....39,358 short tons.

Number of days mines operated	290
Number of pick miners employed.....	36
Number of inside day men employed.....	14
Number of outside day men employed.....	17
Number of machine men employed.....	
Number of loaders employed.....	
Total employed.....	67

Amount of black powder used in breaking down
the coal.....28,322 pounds.

Amount of dynamite used in breaking down the
coal..... 550 pounds.

Number of accidents in Yellowstone County for the same
period, causes.

Injured by falling off the trestle.....I

Total injured.....I

Coal and Coke Production from October 31, 1906, to November 1, 1907.

NAME OF COMPANY	LOCATION	No. of Days Mine Worked	No. of Pick Min- ers Em- ployed	No. of Inside Day Men Employed.....	No. of Outside Day Men Employed.....	No. of Men Employ- ed Operating Mining Machines....	No. of Loaders.....	Tonnage Short Tons .
Montana Coal & Coke Co.....	Aldridge	300	140	43	64	...	...	56,691
Maxey Brothers	Chimney Rock	250	30	3	20	...	...	7,629
Anderson & Evans	Chimney Rock	284	26	2	6	...	...	18,908
Trail Creek Coal Co.....	Chimney Rock	240	19	25	10	...	...	8,366
Williams Mine	Livingston	140	4	...	...	...	...	80
Washoe Copper Co.....	Storrs	90	43	5	50	...	...	14,978
Northwestern Improvement Co.....	Chestnut	264	80	46	30	...	6	64,128
Spring Creek Coal Co.....	Lewistown	300	49	10	12	...	...	26,503
Thomas Phillips	Maiden	240	4	...	1	...	...	1,975
Sharp Brothers	Lewistown	106	5	1	1	...	...	550
Central Montana Coal Co.....	Lewistown	60	12	2	7	...	4	790
Sam Schultz	Utica	260	3	...	...	...	...	2,343
Rand Mine	Moore	150	2	2	...	...	...	718
Beaver Creek Fuel Co.....	Moore	150	2	...	...	...	...	443
Dan Sharp	Utica	200	4	...	...	...	...	600
Shipley & Kempf	Gilt Edge	300	2	...	1	...	...	1,300
Cottonwood Coal Co.....	Stockett	274	...	113	95	107	145	571,227
Nelson-Jenks Coal Co.....	Sand Coulee	308	50	45	25	28	35	163,700
Stainsby-Latham Co.	Sand Coulee	150	8	2	2	...	...	6,145
Gerber Mine	Sand Coulee	290	15	25	12	30	12	61,717
Richardson Mine	Armington .....	...	4	...	...	...	...	1,046
Pat O'Neill	Belt .....	...	2	...	...	...	...	65
Anaconda Copper Mining Co.....	Belt	206	47	48	65	32	120	253,048
Fred Schmauch & Co.....	Belt	250	8	3	1	...	...	2,701
Millard Mine	Belt	238	2	...	...	...	...	800
Louis Dahn	Sand Coulee	140	8	2	1	...	...	3,360
Orr Brothers	Belt	250	10	1	3	...	...	4,448
Jeff Nelson	Chinook	150	2	1	...	...	...	555
Macton Coal Co.....	Big Sandy	195	6	3	5	...	...	639
J. H. Thornber	Chinook	300	4	...	...	...	...	1,614

Coal and Coke Production from October 31, 1906, to November 1, 1907—Continued.

NAME OF COMPANY	LOCATION	No. of Days Mine Worked	No. of Pick Min- ers Em- ployed	No. of Inside Day Men Employed.....	No. of Outside Day Men Employed.....	No. of Men Employ- ed Operating Mining Machines....	No. of Loaders.....	Tonnage Short Tons
H. Raeder	Chinook	90	2	...	...	...	...	300
C. C. Mack	Big Sandy	250	2	...	...	...	...	1,010
Hayre Coal Co.	Hayre	307	26	4	14	...	...	9,651
Bridger Coal & Improvement Co.	Bridger	275	60	40	25	12	15	54,441
International Coal Co.	Bear Creek	260	35	4	5	...	...	10,025
Killorn & Weber	Fromberg	253	25	2	2	...	...	16,163
Montana Coal & Iron Co.	Bear Creek	100	38	10	11	...	...	8,071
Bituminous Coal Co.	Coalville	299	52	28	26	...	...	64,246
Washoe Copper Co.	Bear Creek	148	75	12	6	...	...	7,896
Bear Creek Coal Co.	Bear Creek	220	75	8	18	8	8	88,067
Northwestern Improvement Co.	Red Lodge	302	360	140	130	...	...	466,859
Smokeless & Sootless Coal Co.	Bear Creek	230	20	4	5	...	...	6,675
Joliet Coal & Fuel Co.	Joliet	300	10	2	5	...	...	12,000
Pedan & Elder	Miles City	300	6	2	1	...	...	7,142
Cooper Mine	Culbertson	60	2	...	...	...	...	300
Republic Coal Co.	Roundup .....	...	...	...	...	...	...	150

Total number short tons of coal produced from Nov. 1, 1906, to Oct. 31, 1907, 2,030,564 reported.

Production in 1907 would show nearly 13 per cent increase over 1906.

Number of pick miners employed 1,370

Number operating mining machines 217

Number of loaders employed 345

Number of inside men employed 638

Number of outside men employed 659

There was coke made from 53,453 tons of coal at Electric and from 14,074 at Storrs.

Output of Coal and Coke from October 31, 1907, to November 1, 1908.

NAME OF COMPANY	LOCATION	No. of Days Mines Operated	No. of Pick Miners Employed.....	No. of Inside Day Men Employed.....	No. of Outside Day Men Employed.....	No. of Machine Men Employed	No. of Loaders Employed	Tonnage Produced Short Tons
Gerber Coal Co.....	Sand Coulee	171	11	12	10	6	8	29,132
Nelson-Jenks Coal Co.....	Sand Coulee	196	50	50	15	15	50	113,612
Stainsby-Latham Coal Co.	Sand Coulee	228	12	2	3	..	..	13,728
Cottonwood Coal Co.	Stockett	204.5	..	98	111	106	148	433,166
Dahn Coal Mine	Sand Coulee	100	6	1	2	..	..	3,500
Lakeside Coal Co.	Sand Coulee	2	10	1	2	..	..	25
Oregon & Montana Coal Co.....	Sand Coulee	152	6	3	1	..	..	775
Lochray Mine	Sand Coulee	22	2	..	1	..	..	218
Richardson Mine	Armington	110	2	..	..	..	..	1,510
Orr Brothers	Belt	70	5	1	2	..	..	1,530
Millard Mine	Belt	200	2	..	..	..	..	875
Fred Schmauch & Co.....	Belt	230	6	2	1	..	..	5,068
Jimmie Hope Mine	Belt	250	2	..	..	..	..	2,054
Anaconda Copper Mining Co.....	Belt	243	37	90	55	34	77	186,299
Armington Mine	Armington	100	2	..	..	..	..	500
Northwestern Improvement Co.....	Red Lodge	{ 273 E.S. 166 W.S.	520	193	150	1	..	602,333 E.S. 44,243 W.S.
Bituminous Coal Co.....	Coalville	209	60	40	51	..	..	23,987
Killorn & Weber	Fromberg	220	17	2	2	..	..	12,275
Bridger Coal & Improvement Co.....	Bridger	200	40	20	20	4	8	33,052
Montana Coal & Iron Co.....	Bear Creek	161	16	5	4	..	..	21,954
Washoe Copper Co. (Coal Dept.).....	Washoe	187	90	27	18	..	..	72,862
Bear Creek Coal Co.....	Bear Creek	177	72	7	15	8	34	73,433
International Coal Co.....	Bear Creek	171	78	9	19	..	..	27,570
Smokeless & Sootless Coal Co.....	Bear Creek	240	10	5	5	..	..	6,436
Joliet Coal & Iron Co.....	Joliet	150	3	1	1	..	..	2,350
Montana Fuel & Iron Co.....	Joliet	108	3	..	..	..	..	973
Macton Coal Co.....	Big Sandy	154	6	3	4	..	..	2,422
Havre Coal Co.....	Havre	250	10	2	2	..	..	8,880
Mack Mine	Big Sandy	365	2	..	1	..	..	550
Raeder Mine	Chinook	60	1	..	..	..	..	150

Output of Coal and Coke from October 31, 1907, to November 1, 1908 Continued.

NAME OF COMPANY	LOCATION	No. of Days Mines Operated.....	No. of Pick Miners Employed. ..	No. of Inside Day Men Employed..	No. of Outside Day Men Employed..	No. of Machine Men Employed..	No. of Loaders Employed.....	Tonnage Produced ed Short Tons....
Burns & Cornwall	Chinook	90	1	3	1	..	..	225
Staton Mine	Havre	300	3	..	..	..	..	3,000
Milk River Coal Co.	Chinook	150	8	2	..	..	..	3,740
Alcott Mine	Havre	25	3	..	..	..	..	150
Hatch & Weaver	Miles City	151	6	1	..	..	..	1,283
Elder & Pedan	Miles City	300	6	1	1	..	..	5,624
Yellowstone Coal Co.	Miles City	300	4	1	1	..	..	4,500
Sam Weaver	Miles City	27	1	..	1	..	..	165
Spring Creek Coal Co.	Lewistown	270	70	17	13	2	..	43,492
Mace Mine	Maiden	159	3	1	..	..	..	1,027
Schultz Mine	Sage Creek	250	2	..	..	..	..	1,303
Sharp Mine	Moore	200	2	..	..	..	..	600
Shipley & Kempf	Gilt Edge	290	2	..	1	..	..	2,038
Willow Creek Coal Co.	Willow Creek	305	3	..	..	..	..	2,009
Seman Mine	Sage Creek	290	2	..	1	..	..	1,504
Sharp Brothers	Lewistown	210	5	1	..	..	..	2,150
Central Montana Coal Co.	Lewistown	300	6	1	1	..	..	2,000
Rand Mine	Moore	83	2	..	..	..	..	225
Harrison Mine	Storrs	36	4	..	..	..	..	462
Northwestern Improvement Co.	Chestnut	75	106	24	34	..	..	29,191
Maxey Mine	Chimney Rock	225	3	4	13	..	..	15,250
Trail Creek Coal & Land Co.	Chimney Rock	211	27	3	22	..	..	5,728
Anderson & Evans	Chimney Rock	198	33	8	7	..	..	21,639
Montana Coal & Coke Co.	Electric	242	33	4	8	..	..	65,015
Republic Coal Co.	Electric	300	85	114	109	..	..	39,358
Zeno-George Mine	Roundup	290	36	14	17	..	..	553
Cooper Mine	Culbertson	120	3	1	..	..	..	353
Dempsey Mine	Culbertson	110	2	..	..	..	..	290
	Culbertson	130	1	..	..	..	..	..
Total	.....	.....	.....	.....	.....	.....	.....	1,978,347

Coke made, 29,482 tons, at Electric.

Fatal and Non-Fatal Accidents, Their Nature and Where Occurring, From October 31, 1906, to November 1, 1908

County	Date	Name of Company and Mine	Locality	Name of Person Injured	Age	Nationality	Occupation	Injured	Killed	Married or Single	No. of Children	Cause of Accident; Extent of Injury
Cascade	Dec. 12, 1906...	Anaconda Copper Mining Co.....	Belt	Wm. Lamont.....	..	American.....	Machine Helper....	Injured|.....	.....	Married	3	Falling of coal while operating machine. Leg broken.
Cascade	Feb. 12, 1907...	Anaconda Copper Mining Co.....	Belt	Antone Sineizey .....	..	Slavonian	Miner .....	.....	Killed.....	Married	7	Moving trip; rope haulage.
Cascade	Aug. 29, 1907...	Anaconda Copper Mining Co.....	Belt	Mike Szabo .....	..	Austrian	Miner .....	.....	Killed.....	.....	..	Pillar caving in.
Cascade	May 31, 1907...	Nelson-Jenks Coal Co.....	Sand Coulee.....	Chas. Askan .....	..	Finlander	Miner	Injured|.....	.....	Married	4	Falling of roof; right foot crushed, hlp injured.
Cascade	July 10, 1907...	Nelson-Jenks Coal Co.....	Sand Coulee.	Matt Keko .....	..	Finlander	Machine Runner....	Injured|.....	.....	Married	2	Head caught between roof and machine board. Fracture of clavicle.
Cascade	Sept. 23, 1907...	Nelson-Jenks Coal Co.....	Sand Coulee.....	William Allen .....	..	Scotch	Miner .....	.....	Found dead	Married	..	Was subject to epileptic fits.
Cascade	Nov. 26, 1906...	Nelson-Jenks Coal Co.....	Sand Coulee.....	John F. Hill .....	..	Finlander	Miner	Injured|.....	.....	Single	..	Blasted with powder charged hole blown through from adjacent working place; eye put out, arm injured, head badly lacerated.
Cascade	July 29, 1907...	Nelson-Jenks Coal Co.....	Sand Coulee.....	Nick Miller .....	..	Polish .....	.....	.....	.....	.....	..	.....
Cascade	Feb. 5, 1907...	Ed Gerber Coal Co.....	Sand Coulee.....	Frank Danch .....	..	.....	Timber Helper....	Injured|.....	.....	Single	..	Falling coal while working with machine; little finger cut off.
Cascade	Oct. 27, 1907...	Ed Gerber Coal Co.....	Sand Coulee.....	John Stepanovitch.....	..	Austrian.....	Machine Helper....	Injured|.....	.....	Married	3	Falling coal; cut on head; back and side bruised.
Cascade	Jan. 8, 1907...	Cottonwood Coal Co.....	Stockett.	Jonas A. Koski .....	..	Finlander	Fireman .....	.....	Killed.....	Married	1	Killed while running ash hoist engine.
Cascade	Mar. 4, 1907...	Cottonwood Coal Co.....	Stockett.....	Samuel Mani .....	..	Finlander	Machine Runner....	.....	Killed.....	.....	..	Coal fell on him while running a mining machine.
Cascade	.....	Cottonwood Coal Co.....	Stockett.....	Bert Calvert .....	..	Italian.....	Nipper	Injured|.....	.....	Single	..	Bone in foot fractured; no cause given.
Cascade	.....	Cottonwood Coal Co.....	Stockett.....	Howard Thiery .....	..	Finlander	Miner	Injured|.....	.....	Single	..	Bone in leg fractured; no cause given.
Carbon	Nov. 13, 1906..	Northwestern Improvement Co.....	Red Lodge.....	John Livra .....	..	Italian.....	Miner	Injured|.....	.....	Married	..	Let cut and lacerated by a car running into trip he was riding.
Carbon	Dec. 4, 1906...	Northwestern Improvement Co.....	Red Lodge.....	John Dalman .....	..	Finlander	Miner	Injured|.....	.....	Single	..	Falling of roof; head cut and wrist broken.
Carbon	Dec. 9, 1906...	Northwestern Improvement Co	Red Lodge.....	Joseph Romersa .....	..	Italian.....	Miner	Injured|.....	.....	Married	..	Leg broken below knee by falling roof.
Carbon	Jan. 9, 1907...	Northwestern Improvement Co	Red Lodge.....	Isaac Timo .....	..	Finlander	Miner	Injured|.....	.....	Married	3	Slight cuts on head and shoulders, back bruised. (Supposed fall of roof.)
Carbon	Feb. 18, 1907...	Northwestern Improvement Co.....	Red Lodge.....	Ole Mattson .....	..	Finlander	Miner	Injured|.....	.....	Single	..	Leg broken; fall of roof.
Carbon	Feb. 14, 1907...	Northwestern Improvement Co.	Red Lodge.....	Eric Lake .....	..	Finlander	Miner	Injured|.....	.....	Married	2	Falling of coal; slight injuries to back and body.
Carbon	Feb. 22, 1907...	Northwestern Improvement Co.....	Red Lodge.....	John Warrilla .....	..	Italian.....	Miner	Injured|.....	.....	Single	..	Leg broken below knee. Fall of coal.
Carbon	April 3, 1907...	Northwestern Improvement Co.	Red Lodge.....	Hoening Johnson .....	..	Finlander	Miner	Injured|.....	.....	Married	5	Cable of McGinty swung and knocked out prop, coal fell breaking leg.
Carbon	April 4, 1907...	Northwestern Improvement Co.....	Red Lodge.....	August Columbo .....	..	Italian.....	Miner	Injured|.....	.....	Single	..	Leg broken by falling timber.
Carbon	April 29, 1907...	Northwestern Improvement Co.....	Red Lodge.....	James Souza .....	..	Italian.....	Miner	Injured|.....	.....	Single	..	Leg broken by moving car.
Carbon	May 8, 1907...	Northwestern Improvement Co.....	Red Lodge.....	Joseph Enrico .....	..	Italian.....	Miner	Injured|.....	.....	Single	..	Leg broken above knee; arm broken just above wrist; falling of roof.
Carbon	May 8, 1907...	Northwestern Improvement Co.....	Red Lodge.....	John Bertal .....	..	Italian.....	Miner .....	.....	Killed.....	Single	..	Fall of coal and rock.
Carbon	May 29, 1907...	Northwestern Improvement Co	Red Lodge.....	John Young .....	..	Scotch	Miner .....	.....	Killed.....	Married	1	Fall of rock.
Carbon	Aug. 6, 1907...	Northwestern Improvement Co.....	Red Lodge.....	Henry Marki .....	..	Finlander	Miner .....	.....	Killed.....	Married	..	Fall of roof.
Carbon	Aug. 11, 1907...	Northwestern Improvement Co.	Red Lodge.....	Antone Yankawsk .....	..	Poland	Miner	Injured|.....	.....	Single	..	Leg broken by falling rock.
Carbon	Aug. 11, 1907...	Northwestern Improvement Co.....	Red Lodge.....	Oscar Maki .....	..	Finlander	Miner .....	.....	Killed.....	Single	..	Killed by falling roof.
Carbon	Sept. 18, 1907..	Northwestern Improvement Co.....	Red Lodge.....	Toney Rusick.....	..	Austrian.....	Miner	Injured|.....	.....	Single	..	Leg broken above ankle; moving car.
Carbon	Sept. 19, 1907..	Northwestern Improvement Co.....	Red Lodge.....	John Makala.....	..	Finlander.....	Miner	Injured|.....	.....	Single	..	Scalp wound and back bruised; fall of rock.
Carbon	Mar. 13, 1907..	Bridger Coal & Improvement Co.....	Bridger	Charles Anderson.....	..	Swede.....	Machine Runner....	.....	Killed.....	Married	3	Killed by electric machine.
Carbon	Oct. 23, 1907..	Bridger Coal & Improvement Co.....	Bridger	Dick Thompson.....	..	English.....	Car Pusher.....	Injured|.....	.....	Single	..	Dislocation of left hip; riding loaded trip.
Carbon	Nov. 4, 1907..	Bridger Coal & Improvement Co.....	Bridger	Basil Haggerman.....	..	American.....	Trapper	Injured|.....	.....	Single	..	Little finger of left hand cut off at second joint by cable.
Carbon	Nov. 15, 1907...	Bridger Coal & Improvement Co.....	Bridger	Jerry Turk.....	..	Austrian.....	Miner.....	Injured|.....	.....	Married	..	Hand crushed between the car and roof.
Carbon	Nov. 4, 1907...	Bridger Coal & Improvement Co.....	Bridger	Frank Gradisha.....	..	Austrian.....	Rope Rider.....	Injured|.....	.....	Single	..	Car jumped track; when reaching to signal by electric bell was caught and collar bone broken.
Carbon	April 5, 1907..	Bituminous Coal Co.....	Coalville	David Flemlng.....	..	American.....	Driver	Injured|.....	.....	Single	..	Arm skinned and bone fractured; fell in front of car.
Carbon	Aug. 1, 1907..	Bituminous Coal Co.....	Coalville	Stephen Kairis.....	..	Russian.....	Miner.....	Injured|.....	.....	Single	..	Skull fractured; jaw fractured; head cut; body bruised; blasted by charged hole.
Carbon	Aug. 7, 1907..	Bituminous Coal Co.....	Coalville	John Julius.....	..	Austrian.....	Machine Helper....	Injured|.....	.....	Single	..	Hand crushed; machine runner was letting down shearing machine and hand was caught.

Fatal and Non-Fatal Accidents, Their Nature and Where Occurring, From October 31, 1906, to November 1, 1908--Continued

County	Date	Name of Company and Mine	Locality	Name of Person Injured	Age	Nationality	Occupation	Injured	Killed	Married or Single	No. of Children	Cause of Accident; Extent of Injury
Carbon	July 21, 1907...	Bear Creek Coal Co.....	Bear Creek.....	S. B. Johnson.....	..	Swede.....	Miner.....	Injured	.....	Single	..	Leg broken; elbow lacerated; body and chest bruised; moving car.
Carbon	Jan. 11, 1907..	Smokeless & Sootless Coal Co.....	Bear Creek.....	Wm. McKenzie.....	..	Scotch.....	Driver	Injured	.....	Married	1	Back and knee strained; car jumped track knocking out timber and roof fell.
Carbon	Jan. 15, 1907..	Smokeless & Sootless Coal Co.....	Bear Creek.....	Tim Managan.....	..	Irish.....	Miner.....	Injured	.....	Single	..	Back evidently broken by fall of roof in working place.
Carbon	Mar. 9, 1907..	International Coal Co.....	Bear Creek.....	Amos Wise.....	..	American.....	Miner.....	Injured	.....	Married	2	Dislocation of hip; falling of roof.
Park	Jan. 4, 1907..	Anderson & Evans	Chimney Rock.....	Frank Stine.....	..	Austrian.....	Miner.....	Injured	.....	Single	..	Fracture of tibia by falling roof.
Park	May 23, 1907..	Montana Coal & Coke Co.....	Aldridge	John Sisdar.....	..	Austrian.....	Miner.....	Injured	Killed.....	Married	2	Killed by falling roof.
Park	Aug. 22, 1907..	Montana Coal & Coke Co.....	Aldridge	Joe Getrieher.....	..	Austrian.....	Brusher	Injured	.....	Single	..	Severe bruising of muscles of back and leg; slight injury to bowels.
Park	Aug. 31, 1907..	Montana Coal & Coke Co.....	Aldridge	John Smith.....	..	Austrian.....	Miner.....	Injured	.....	Single	..	Scalp wound on both sides of head, portion of ear gone; injured by moving car.
Park	Sept. 24, 1907..	Montana Coal & Coke Co.....	Aldridge	Andrew Kobic.....	..	Austrian.....	Miner.....	Injured	.....	Married	2	Complete crushing of right hand necessitating amputation at wrist.
Park	Nov. 5, 1907..	Montana Coal & Coke Co.....	Aldridge	John Chiploek.....	..	Austrian.....	Miner.....	Injured	.....	Married	5	Arm fractured by falling timber.
Park	Feb. 23, 1907..	Montana Coal & Coke Co.....	Aldridge	Frank Smith.....	..	Austrian.....	Miner.....	Injured	.....	Single	..	Slight injuries by falling rock.
Park	May 15, 1907..	Montana Coal & Coke Co.....	Aldridge	William Gram.....	..	German.....	Miner.....	Injured	.....	Single	..	Rib injured, also slight injury to right side; falling rock.
Park	May 1, 1907..	Montana Coal & Coke Co.....	Aldridge	Lew Neighbone.....	..	Austrian.....	Miner.....	Injured	.....	Married	3	Incision and contusion of left hand; kicked by mule.
Park	Sept. 14, 1907..	Montana Coal & Coke Co.....	Aldridge	Lew Neighbone.....	..	Austrian.....	Miner.....	Injured	.....	Married	4	Finger on left hand broken; falling rock.
Park	July 5, 1907..	Montana Coal & Coke Co.....	Aldridge	William Pollard .....	..	English.....	Foreman	Injured	.....	Married	2	Foot injured by moving cars; severe bruising and straining.
Park	April 27, 1907..	Montana Coal & Coke Co.....	Aldridge	James Condon.....	..	Welch.....	Blacksmith.....	Injured	.....	Married	5	Broken arm; boiler plate fell on him while dismantling boiler.
Park	July 13, 1907..	Montana Coal & Coke Co.....	Aldridge	Nels Nelson .....	..	Swede.....	Driver	Injured	.....	Single	..	Head cut badly and jaw broken; moving cars.
Fergus	Dec. 11, 1906..	Spring Creek Coal Co.....	Lewistown	Adolph Hutterln.....	..	Finlander.....	Miner.....	Injured	.....	Single	..	Blasted with powder; scalp, face, eye and neck injured; little finger of right hand broken and contused.
Fergus	Feb. 20, 1907..	Spring Creek Coal Co.....	Lewistown	Ole Langelaid.....	..	Norwegian.....	Miner.....	Injured	.....	Single	..	Clavicle fractured; leg and foot badly bruised; falling coal.
Gallatin	Dec. 18, 1906..	Northwestern Improvement Co.....	Chestnut.....	Mike Stranger.....	..	Austrian.....	Laborer	Injured	.....	Single	..	Left leg broken; struck by cable of waste car.
Gallatin	Mar. 20, 1907..	Northwestern Improvement Co.....	Chestnut.....	John Maykoth.....	..	Austrian.....	Miner.....	Injured	.....	Married	6	Hips and legs bruised; caught and partially buried by coal which stuffed off from both sides of room.
Gallatin	June 3, 1907..	Northwestern Improvement Co.....	Chestnut.....	Mike Perovich.....	..	Montenegrin.....	Miner.....	Injured	.....	Single	..	Burned on hands and face by gas explosion.
Gallatin	June 16, 1907..	Northwestern Improvement Co.....	Chestnut.....	Frank Leonard.....	..	Austrian.....	Miner.....	Injured	.....	Married	..	Face and head burned by gas explosion.
Gallatin	June 16, 1907..	Northwestern Improvement Co.....	Chestnut.....	Hugh McKee.....	..	Scotchman.....	Driver	Injured	.....	Single	..	Face, neck and hands burned by explosion.
Gallatin	June 14, 1907..	Northwestern Improvement Co.....	Chestnut.....	Peter Parnicklnck.....	..	Montenegrin.....	Miner	Injured	.....	Single	..	Contusion of muscles of back and spinal cord; struck by falling timber.
Gallatin	Sept. 1, 1907..	Washoe Copper Co.....	Storrs.....	Mike Strenovleh.....	..	Montenegrin.....	Laborer .....	.....	Killed.....	.....	..	Suffocated; covered with fine coal in slack bin.
Cascade	Feb. 5, 1908..	Nelson-Jenks Coal Co.....	Sand Coulee.....	Antonia Bartolutti.....	35	Italian.....	Loader.....	.....	Killed.....	Married	2	Struck by falling roof.
Cascade	Feb. 14, 1908..	Anaeonda Copper Mining Co.....	Belt.....	Jacob Keto.....	43	Finlander.....	Miner.....	Injured	.....	Married	6	Compound dislocation of ankle joint; small bones of foot fractured; subclavicular dislocation of shoulder; fractured wrist.
Cascade	Mar. 21, 1908..	Anaeonda Copper Mining Co.....	Belt.....	Peter Armistada.....	31	Italian.....	Miner.....	Injured	.....	Single	..	Fracture of Tibia and tibia, femur and nasal bones; powder blast.
Cascade	May 26, 1908..	Nelson-Jenks Coal Co.....	Sand Coulee.....	John Charrere.....	50	Italian.....	Loader.....	Injured	.....	Married	5	Compound fracture of fifth metatarsal bone, right foot; falling roof.
Cascade	Aug. 26, 1908..	Nelson-Jenks Coal Co.....	Sand Coulee.....	Solo Clinkoff.....	40	Bulgarian.....	Loader.....	Injured	.....	Single	..	Compound fracture of tibia, tibia; badly lacerated index finger; contusion of scalp; laceration of left cheek; falling roof.
Cascade	Sept. 21, 1908..	Gerber Mine	Sand Coulee.....	Simon Makerenko.....	50	Austrian.....	Miner.....	Injured	.....	Single	..	Broken leg caused by moving trip.

Fatal and Non-Fatal Accidents, Their Nature and Where Occurring, From October 31, 1906, to November 1, 1908---Continued

County	Date	Name of Company and Mine	Locality	Name of Person Injured	Age	Nationality	Occupation	Injured	Killed	Married or Single	No. of Children	Cause of Accident; Extent of Injury
Cascade	Oct. 13, 1908...	Gerber Mine	Sand Coulee.....	John Portin.....	40	Finlander.....	Miner.....	.....	Killed.....	Married	7	Killed by falling coal.
Cascade	Nov. 6, 1907...	Nelson-Jenks Coal Co.....	Sand Coulee.....	John Husby.....	..	Swede.....	Driver.....	Injured.....	.....	Single	..	Bruised foot and cut on leg. Trip ran into another car.
Cascade	Feb. 22, 1908...	Nelson-Jenks Coal Co.....	Sand Coulee.....	George Woodarsh.....	..	German.....	Switch Tender.....	Injured.....	.....	Single	..	Bruised and otherwise injured by moving car.
Carbon	Dec. 14, 1907...	Northwestern Improvement Co.....	Red Lodge.....	Salla Witta.....	..	Finlander.....	Miner.....	.....	Killed.....	.....	..	Killed by falling rock.
Carbon	Dec. 21, 1907...	Northwestern Improvement Co.....	Red Lodge.....	Gust B. Maki.....	41	Finlander	Miner.....	Injured.....	.....	Single	..	Left leg broken between knee and ankle; foot crushed; falling roof.
Carbon	Nov. 14, 1907...	Northwestern Improvement Co	Red Lodge.....	Steve Starickick.....	15	Slavonian.....	Picking Dirt.....	.....	Killed.....	Single	..	Riding picking table; died as result of injuries.
Carbon	Dec. 21, 1907...	Northwestern Improvement Co.....	Red Lodge.....	John Jackola.....	45	Finlander.....	Miner.....	Injured.....	.....	Married	4	Scalded lower limbs by stepping into excavation containing heated water.
Carbon	Dec. 21, 1907...	Smokeless & Sootless Coal Co.....	Bear Creek.....	James Branditto.....	50	Italian.....	Miner.....	Injured.....	.....	Married	1	Two scalp wounds; concussion of brain; fracture of ribs; falling roof.
Carbon	Jan. 3, 1908...	Northwestern Improvement Co.....	Red Lodge.....	John Hill.....	35	Finlander.....	Miner.....	.....	Killed.....	Single	..	Compound fracture of left leg and foot; fracture of pelvic bone; internal hemorrhage; caused by falling roof.
Carbon	Jan. 17, 1908...	Smokeless & Sootless Coal Co.....	Bear Creek.....	Marin Messelch.....	43	Slavonian.....	Miner.....	Injured.....	.....	Married	..	Back and leg bruised by falling coal.
Carbon	Jan. 25, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Paul Mattson.....	..	Finlander.....	Timberman.....	.....	Killed.....	Married	..	Premature blast of dynamite, was thawing out powder with naked light.
Carbon	Feb. 12, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Kuster Sjolund.	28	Finlander.....	Miner.....	Injured.....	.....	Single	..	Chest and back bruised; reflectory paralysis of bladder; falling roof.
Carbon	Mar. 4, 1908...	International Coal Co.....	Bear Creek	Isodore Slomsky	21	Polish.....	Miner.....	Injured.....	.....	Single	..	Falling of roof; right leg fractured above the ankle.
Carbon	Mar. 10, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Steve Milokoski.....	38	Hungarian.....	Miner.....	Injured.....	.....	Single	..	Moving cars, runaway trip on slope; shock, slight contusion of spine.
Carbon	Mar. 11, 1908...	Northwestern Improvement Co.....	Red Lodge.....	August Fagar.....	27	Swede.....	Miner	Injured.....	.....	Single	..	Powder charged hole; simple fracture of skull; contusion of shoulder.
Carbon	April 8, 1908...	Bridger Coal & Improvement Co.....	Bridger.....	John McDonald.....	35	Scotch.....	Laborer.....	Injured.....	.....	Single	..	Falling roof; badly bruised; left arm broken between elbow and shoulder.
Carbon	April 22, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Matto Maki.....	52	Finlander.....	Miner.....	Injured.....	.....	Married	..	Falling roof; left leg broken between knee and ankle.
Carbon	May 7, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Dom. Micheletti.....	35	Italian.....	Miner.....	.....	Killed.....	Single	..	Falling roof; was laying down mindag when roof gave way.
Carbon	May 23, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Andrew Wukovich.....	24	Montenegrin....	Miner.....	Injured.....	.....	Single	..	Falling roof and coal; two ribs broken; bruised on back and side.
Carbon	May 27, 1908...	Bridger Coal & Improvement Co.....	Bridger.....	Gus Johnson.....	48	Swede.....	Miner.....	.....	Killed.....	Single	..	Killed by falling coal.
Carbon	June 18, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Thos. E. Flynn.....	16	American.....	Coal Picker.....	Injured.....	.....	Single	..	Riding feeder rock belt; foot caught between feeder and plate; broken ankle, laceration of muscles and flesh torn from lower part of leg.
Carbon	June 18, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Antone Yankowski.....	23	Polish.....	Miner.....	Injured.....	.....	Single	..	Falling roof; compound fracture of leg above ankle.
Carbon	June 20, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Edward Dean.....	30	Irish.....	Miner.....	Injured.....	.....	Married	2	Falling roof; severe contusions on back, foot and thumb.
Carbon	June 20, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Edward Zonzo	37	Italian.....	Timberman.....	Injured.....	.....	Married	1	Falling roof; both legs fractured between knee and ankle; right hip fractured and severe contusions of muscles on hip and right side.
Carbon	June 20, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Apton Columbi	32	Italian.....	Night Foreman....	Injured.....	.....	Married	..	Falling roof; fracture of right leg between knee and ankle; fracture of left hip; contusion of lumbar muscles internal pelvis injuries
Carbon	June 26, 1908...	Northwestern Improvement Co.....	Red Lodge.....	William Dunn.....	40	Scotch.....	Miner.....	Injured.....	.....	Married	3	Gas probably ignited and caused fuse to light and explode hole; Dunn says hole was not tamped; cut on back of head, face neck and hands.
Carbon	June 26, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Charles Carlson.....	39	Swede.....	Miner.....	Injured.....	.....	Single	..	Gas probably ignited causing fuse to burn rapidly and explode powder; head cut on right side; cuts on face, neck and hands.
Carbon	July 9, 1908...	Northwestern Improvement Co.....	Red Lodge.....	John Love.....	27	Scotch.....	Miner.....	.....	Killed.....	Married	2	Killed by falling coal

Fatal and Non-Fatal Accidents, Their Nature and Where Occurring, From October 31, 1906, to November 1, 1908---Continued

County	Date	Name of Company and Mine	Locality	Name of Person Injured	Age	Nationality	Occupation	Injured	Killed	Married or Single	No. of Children	Cause of Accident; Extent of Injury
Carbon	Aug. 26, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Mike Marcovitch .....	..	Austrian.....	Miner.....	Injured	.....	.....		Moving trip; men were riding in trip (motor) behind timber trucks loaded with timber, standard broke, timber caught and mowed men down.
Carbon	Aug. 6, 1908...	Northwestern Improvement Co.....	Red Lodge.....	Henry Ranta.....	24	Finlander.....	Miner.....	.....	Killed.....	Single		Falling coal; shoulder broke and face lacerated.
Carbon	Aug. 26, 1908...	Northwestern Improvement Co.....	Red Lodge	Oscar Paavala	24	Finlander.....	Miner .....	.....	Killed.....	Single		Moving cars, timber trucks wrecked. Spinal cord injured resulting at once in paralysis.
Carbon	Aug. 26, 1908...	Northwestern Improvement Co.....	Red Lodge	Frank Kruges .....	..	Austrlan	Miner	Injured	.....	Single		Moving cars, trucks wrecked. Severe abrasion on cheek and general contusions.
Carbon	Aug. 24, 1908...	Bear Creek Coal Co.....	Bear Creek	Antone Pozza	24	Austrian	Machine Runner ..	Injured	.....	Single		Jacking up mining machine, fell on hand, crushed finger, necessitating amputation.
Carbon	Sept. 4, 1908...	Northwestern Improvement Co.....	Red Lodge	Patrick Ward	43	Irish.....	Driver .....	.....	Killed.....	Single		Moving trip; fell in front of trip and was killed.
Carbon	Sept. 4, 1908...	Bituminous Coal Co.....	Coalville	Ben Bluestone	22	English	Laborer	Injured	.....	Single		Moving trip; ankle sprained, squeezed about waist.
Carbon	Sept. 10, 1908...	Bituminous Coal Co.....	Coalville	Peter Marz	20	Austrian	Miner	Injured	.....	Single		Falling of roof; back sprained.
Carbon	Sept. 14, 1908...	Bituminous Coal Co.....	Coalville	Jim Sheppard	22	American	Driver	Injured	.....	Single		Moving trip; three ribs dislocated.
Carbon	Sept. 18, 1908...	Washoe Copper Co.....	Washoe	Louis Sekolly	24	Servian	Miner	Injured	.....	Single		Falling roof; scalp cut, bruised nose, spine and ankle.
Carbon	Sept. 18, 1908...	Washoe Copper Co.....	Washoe	Mika Stankovich	24	Servian	Miner	Injured	.....	Single		Falling roof; cut and bruised about the head and body.
Carbon	Sept. 21, 1908...	International Coal Co.....	Bear Creek	Louis Sarnosky	30	Slavonian	Miner	Injured	.....	Married	1	Moving car, letting same down incline with rope around post; post pulled out. Left leg fractured below knee.
Carbon	Sept. 21, 1908...	Montana Coal & Iron Co.....	Bear Creek	Rado Jovich	21	Montenegrin	Miner	Injured	.....	Single		Falling roof; compound fracture of left leg two inches above ankle.
Carbon	Oct. 17, 1908...	Bituminous Coal Co.....	Coalville	Louis Stringara	35	Italian	Miner	Injured	.....	Married	3	Falling roof; skin cut on right side of temple.
Carbon	Oct. 26, 1908...	Washoe Copper Co.....	Washoe	James Taylor	27	American	Driver	Injured	.....	Single		Moving trip; fell or was thrown off car and squeezed as cars were passing; right clavicle fractured.
Carbon	Jan. 9, 1908...	Bridger Coal & Improvement Co.....	Bridger	M. C. Ferguson	30	English	Miner	Injured	.....	Single		Rock fell, breaking leg.
Carbon	July 12, 1908...	Bridger Coal & Improvement Co.....	Bridger	Adam Wankenshaw	35	English	Machine Runner ..	Injured	.....	Married		Drilling machine; torn somewhat.
Park	Nov. 5, 1907...	Montana Cole & Coke Co.....	Aldridge	John Chiplock, Jr.....	35	Austrian	Miner	Injured	.....	Married	5	Falling timber; fracture of radius of left arm.
Park	Jan. 7, 1908...	Montana Cole & Coke Co.....	Electric	F. P. Glotch, Jr.....	18	Austrlan	Loader	Injured	.....	Single		Moving trip; severe strain of muscles of neck and back.
Park	Jan. 10, 1908...	Montana Cole & Coke Co.....	Electric	Henry Acklemier	20	American	Carpenter	Injured	.....	Single		Falling timber; crushed toe, involving nail and portion of flesh.
Park	Jan. 27, 1908...	Montana Cole & Coke Co.....	Aldridge	Andrew Sharki	31	Austrian	Foreman	Injured	.....	Married	3	Miner's pick; puncture wound in front of ankle.
Gallatin	Feb. 4, 1908...	Trail Creek Coal & Land Co.....	Chimney Rock.....	Wm. Boucher	32	American	Miner	Injured	.....	Married	2	Explosion of gas; slight burning of face and hands.
Gallatin	Feb. 18, 1908...	Trail Creek Coal & Land Co.....	Chimney Rock.....	Sam Stark	50	American	Miner	Injured	.....	Single		Falling coal; fracture of tibia and bruising of muscles.
Park	Mar. 23, 1908...	Montana Cole & Coke Co.....	Aldridge	Joe Vershnik	24	Austrian	Laborer .....	.....	Killed.....	Single		Hook on block and tackle breaking.
Park	April 10, 1908...	Montana Cole & Coke Co.....	Aldridge	Mike Gergich	30	Austrian	Miner	Injured	.....	Single		Falling roof; slight abrasion on head; severe muscular injury to arm.
Park	Aug. 18, 1908...	Montana Cole & Coke Co.....	Aldridge	Toney Shedi	35	Austrlan	Miner	Injured	.....	Single		Falling roof; severe contusion on back, injury to spine; fracture of right leg between knee and ankle.
Park	Sept. 27, 1908...	Montana Cole & Coke Co.....	Aldridge	Lawrence Galichenck.....	34	Austrlan	Miner	Injured	.....	Single		Moving trip; severe contusions to muscles of left foot.
Park	Oct. 21, 1908...	Montana Cole & Coke Co.....	Aldridge	George Oliver	29	American	Miner	Injured	.....	Single		Blasted with powder charged hole; rib fractured, bruised on chest about injured rib.
Yellowstone	Feb. 8, 1908...	Republic Coal Co.....	Roundup	Richard Bramfield .....	..	Irish	Laborer	Injured	.....	Single		Fell off trestle; shoulders, neck, head and face bruised.

EXPLANATION.

The physical condition and improvements in and around mines, usually published in the report of mines, have been eliminated from our printed report by the order of Board of Examiners owing to the condition of the printing fund.

This information was submitted to the Governor in our type-written report to him.

Respectfully submitted,

J. B. McDERMOTT,

State Coal Mine Inspector.

